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09/618,653	07/18/2000	Eamonn Gormley	1999-0794(STG191)	8732

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EXAMINER	
DUONG, FRANK	

ART UNIT	PAPER NUMBER
2666	11

DATE MAILED: 08/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/618,653	Applicant(s) GORMLEY, EAMONN	
	Examiner Frank Duong	Art Unit 2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 July 2000*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10,13,15-36* is/are rejected.

7)☒ Claim(s) *11,12 and 14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 November 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *5&9*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is a response to the communication dated 07/18/2000. Claims 1-36 are pending in the application.

Information Disclosure Statement

2. The information disclosure statements filed 7/18/00, 1/28/02 and 6/14/04 comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609. They have been considered and placed in the application file.

Drawings

3. The drawings were received on 11/08/00. These drawings are approved.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-10, 13, 15-17, 19-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Pollack et al (USP 6,192,026) (hereinafter "Pollack").

Regarding **claim 1**, in accordance with Pollack reference entirety, Pollack discloses a method for receiving uplink data messages at a base station (*Fig. 1; element 204*), without collisions, from a plurality of remote units (*Fig. 1; elements 202*), the method comprising:

assigning a plurality of unique uplink request signals to a plurality of remote units, including a first unique uplink request signal to a first remote unit and a second unique uplink request signal to a second remote unit (*col. 9, lines 28-30 and lines 47-57*);

monitoring the plurality of unique uplink request signals (*col. 8, lines 58-60 and col. 9, lines 30-31*);

simultaneously receiving monitored unique uplink request signals, including the first and second unique uplink request signals (*col. 8, lines 58-60 and thereinafter*);

in response to receiving the first and second unique uplink request signals, determining that the first and second remote units have data messages to transmit uplink (*col. 9, lines 58-59 and thereinafter*), and authorizing the transmission of uplink data messages from the first and second remote units to the base station (*col. 10, lines 7-14*).

Regarding **claim 2**, in addition to features recited in base claim 1 (see rationales discussed above), Pollack further discloses wherein a plurality of frequency tones are included, and in which the assignment of a unique uplink request signal includes assigning a frequency tone from the plurality of frequency tones to each of the first plurality of remote units (*col. 8, line 65 to col. 9, line 8 and thereinafter*).

Regarding **claim 3**, in addition to features recited in base claim 1 (see rationales discussed above), Pollack further discloses wherein a plurality of time slots are included, and in which the assignment of a unique uplink request signal includes assigning a time slot from the plurality of time slots to each of the plurality of remote units (*col. 2, lines 14-27 or col. 12, line 38 and thereinafter*).

Regarding **claim 4**, in addition to features recited in base claim 1 (see rationales discussed above), Pollack further discloses wherein a plurality of spreading codes are included, and in which the assignment of the unique uplink request signal includes assigning a spreading code from the plurality of spreading codes to each of the plurality of remote units (*col. 2, lines 14-27).*

Regarding **claim 5**, in addition to features recited in base claim 2 (see rationales discussed above), Pollack further discloses establishing an arbitration state, the establishment of the arbitration state including:

transmitting a request for unique uplink request signals from the plurality of remote units (*col. 9, lines 28-30 and lines 47-57*); and

in response to the request for unique uplink request signals, monitoring the plurality of unique uplink request signals for a response (*col. 8, lines 58-60 and col. 9, lines 30-31*); and the method further comprising:

establishing a data transfer state (*col. 8, lines 58-60*) including:

sending instructions to the first and second remote units for the transmission of uplink data messages (INFO burst 408) (*col. 7, lines 60-61*); and

receiving the uplink data messages (INFO burst 408) from the first and second remote units (*col. 9, lines 12-26*).

Regarding **claim 6**, in addition to features recited in base claim 5 (see rationales discussed above), Pollack further discloses in which the requesting of uplink request signals includes transmitting an arbitration state signal (*RA burst 404*) the plurality of remote units (*col. 7, lines 35-43 or col. 8, lines 52-64*).

Regarding **claim 7**, in addition to features recited in base claim 6 (see rationales discussed above), Pollack further discloses in which the sending of instructions to the first and second remote unit for the transmission of uplink data messages includes transmitting a data transfer signal (*P&A burst 4*06) to the first and second remote units (202) (*col. 7, lines 27-34*).

Regarding **claim 8**, in addition to features recited in base claim 7 (see rationales discussed above), Pollack further discloses in which the assignment of frequency tones from the plurality of frequency tones to a plurality of remote units includes the plurality of frequency tones being orthogonal to one another with respect to frequency (*col. 8, line 65 to col. 9, line 8 and thereinafter*).

Regarding **claim 9**, in addition to features recited in base claim 8 (see rationales discussed above), Pollack further discloses in which the simultaneous reception of the monitored unique uplink request signals includes simultaneously receiving orthogonal frequency tones (*col. 9, line 47 to col. 10, line 7*).

Regarding **claim 10**, in addition to features recited in base claim 9 (see rationales discussed above), Pollack further discloses simultaneously receiving orthogonal frequency tones in a plurality of time slots (see Fig. 7).

Regarding **claim 13**, in addition to features recited in base claim 7 (see rationales discussed above), Pollack further discloses in which the simultaneous reception of the monitored unique uplink request signals includes transmitting frequency tones from the plurality of frequency tones having a random phase relationship to one another (*col. 8, line 65 to col. 9, line 8 and thereinafter*).

Regarding **claim 15**, in addition to features recited in base claim 10 (see rationales discussed above), Pollack further discloses the assignment of frequency tones from the plurality of frequency tones to a plurality of remote units includes assigning at least two tones from the plurality of frequency tones to each remote unit from the plurality of remote units (*col. 9, line 58 to col. 10, line 7 and thereinafter*).

Regarding **claim 16**, in accordance with Pollack reference entirety, Pollack discloses a method for a remote unit (Fig. 1; element 202) to uplink data messages (INFO burst 408) to a base station (Fig. 1; element 204) without collisions, the method comprising:

receiving a request for unique uplink request signals (*RA burst 404*) (*col. 9, lines 9-14 and thereinafter*);

in response to the request for unique uplink request signals (RA burst 404), transmitting a unique frequency tone (RA CH2 602) when the remote unit has a message to uplink (*col. 9, line 47 to col. 10, line 7*); and

in response to transmitting the unique frequency tone, receiving instructions for sending the uplink data message (P&A burst 406) (*col. 10, line 8 to col. 11, line 58*).

Regarding **claim 17**, in addition to features recited in base claim 16 (see rationales discussed above), Pollack further discloses in response to the request for unique uplink request signals, transmitting unique frequency tones in a predetermined time slot (*col. 2, lines 13-28 or Fig. 7*).

Regarding **claim 19**, in accordance with Pollack reference entirety, Pollack discloses a method for receiving uplink data messages at a base station (*Fig. 1; element 204*), without collisions, from a plurality of remote units (*Fig. 1; elements 202*), the method comprising:

assigning a plurality of unique uplink request signals (RA burst 404) from a first plurality of orthogonal signals (tones) to each remote unit (202) from a first plurality of remotes units (202) remote unit (*col. 9, lines 28-30 and lines 47-57*);

monitoring unique uplink request signals (*col. 8, lines 58-60 and col. 9, lines 30-31*);

simultaneously receiving a second plurality of unique uplink request signals, from among the first plurality of assigned unique uplink request signal, which corresponding to a second plurality of remote units (202) from among the first plurality of remote units (202) (*col. 8, lines 58-60 and thereinafter*);

in response to receiving the second unique uplink request signals, organizing a collision-free sequence of uplink data messages from the second plurality of remote units (*col. 9, lines 58-59 and col. 10, lines 7-14 and thereinafter*).

Regarding **claim 20**, in accordance with Pollack reference entirety, Pollack discloses a method for a base station (*Fig. 1; element 204*) to identify a remote unit (*Fig. 1; elements 202*), the method comprising:

assigning a plurality of unique identification signals (RID sub-field 606) (col. 9, lines 48-49) to a plurality of remote units (202), including a first unique identification signal (604) to a first remote unit (202) (*col. 9, lines 28-30 and lines 47-57*);

monitoring the plurality of unique identification signals (604) (*col. 8, lines 58-60 and col. 9, lines 30-31*);

in response to receiving the first unique identification signal, identifying the first remote unit (202) (*col. 9, lines 58-59 and col. 10, lines 7-14 and thereinafter).*

Regarding **claim 21**, in addition to features recited in base claim 20 (see rationales discussed above), Pollack further discloses wherein a plurality of frequency tones are included, and in which the assignment of a unique identification signal includes assigning a frequency tone from the plurality of frequency tones to the first remote unit (*col. 8, line 65 to col. 9, line 8 and thereinafter*).

Regarding **claim 22**, in addition to features recited in base claim 21 (see rationales discussed above), Pollack further discloses in which the assignment of frequency tone from the plurality of frequency tones includes the plurality of frequency tones being orthogonal to each other (*col. 8, line 65 to col. 9, line 8 and thereinafter*).

Regarding **claim 23**, in addition to features recited in base claim 21 (see rationales discussed above), Pollack further discloses wherein a plurality of time slots are included, and in which the assignment of a unique identification signal includes

assigning a time slot from the plurality of time slots to the first remote unit (*col. 2, lines 14-27 or col. 12, line 38 and thereinafter*).

Regarding **claim 24**, in addition to features recited in base claim 21 (see rationales discussed above), Pollack further discloses wherein a plurality of spreading codes are included, and in which the assignment of the unique identification signal includes assigning a spreading code from the plurality of spreading codes to the first remote unit (*col. 2, lines 14-27).*

Regarding **claim 25**, in accordance with Pollack reference entirety, Pollack discloses a communication system (Fig. 1) for receiving uplink data messages at a base station (204) without collisions, the system comprising:

a base station (204) having a port to transmit and receive messages, the base station establishing an arbitration state to request unique uplink request signals and to monitor unique uplink request signals (*RA burst 404 discloses at col. 9, line 9 and thereinafter is used for remote unit to arbitrate as well as for base station to monitor uplink request in the disclosed OFDM wireless system*);

a first remote unit (202) having a port in communication with the base station to transmit and receive messages, the first remote unit transmitting a first unique uplink request signal to the base station in response to receiving the request for unique uplink request signals (*RID sub-field disclosed at col. 9, lines 48-49 is used by remote unit 202 to distinguish itself when transmitting in an RA channel 602*);

a second remote unit (202) having a port in communication with the base station to transmit and receive messages, the second remote unit transmitting a second unique

uplink request signal to the base station in response to receiving the request for unique uplink request signals (*RID sub-field disclosed at col. 9, lines 48-49 is used by remote unit 202 to distinguish itself when transmitting in an RA channel 602*); and

in which the base station monitors unique uplink request signals received simultaneously from the first and second remote units (*RA burst from 202 are monitored and acknowledged by AP 204 using P&A burst 406 as disclosed at col. 10, line 7 and thereinafter*).

Regarding **claim 26**, in addition to features recited in base claim 25 (see rationales discussed above), Pollack further teaches in which the base station, in response to receiving the first and second unique uplink request signals, establishes a data transfer state (RA channels) to receive the uplink data messages (RA burst 404) from the first and second remote units (202) in a non-interfering sequence (*col. 8, lines 65-67*); and in which the first and second remote units (202) transmit uplink data messages (RA burst 404) in response to uplink instructions (P&A burst 406) from the base station (*col. 10, lines 8-65*).

Regarding **claim 27**, in addition to features recited in base claim 26 (see rationales discussed above), Pollack further teaches a plurality of remote units (202), including the first and second remote units (202), communicating with the base station (204) to receive requests for unique uplink request signals, each one of the plurality of remote units transmitting a unique uplink request signal which represents a request to uplink a data message, and each one of the plurality of remote units receiving uplink

data message transmission instructions from the base station in response to that remote unit transmitting its unique uplink request signal (*col. 9, line 47 to col. 10,* line 7).

Regarding **claim 28**, in addition to features recited in base claim 27 (see rationales discussed above), Pollack further teaches in which the unique uplink request signal of each of the plurality of remote units includes a frequency tone selected from a plurality of unique frequency tones (*col. 8, line 65 to col. 9, line 8*).

Regarding **claim 29**, in addition to features recited in base claim 28 (see rationales discussed above), Pollack further teaches in which each of the plurality of frequency tones is orthogonal to one another with respect to frequency (*col. 8, line 65 to col. 9, line 8*).

Regarding **claim 30**, in addition to features recited in base claim 27 (see rationales discussed above), Pollack further teaches in which the unique uplink request signal of each of the plurality of remote units includes the assignment of a spreading code from a plurality of unique spreading codes (*col. 2, lines 13-27*).

Regarding **claim 31**, in addition to features recited in base claim 27 (see rationales discussed above), Pollack further teaches in which each of the plurality of remote units has a unique identifier (RID sub-field 604) (col. 9, line 50); and

in which the base station uses the remote unit unique identifiers in transmissions to provide uplink data message sequence instructions to the remote units (*col. 9, line 47 to col. 10, line 6*).

Regarding **claim 32**, in addition to features recited in base claim 27 (see rationales discussed above), Pollack further teaches in which the unique identification

for each of the plurality of remote units is selected from the group including remote unit identification numbers and an identification based on each remote unit having a unique uplink request signal (*col. 9, line 47 to col. 10, line 6, Pollack discloses each device 202 fills the RID sub-field 604 with identification number when transmitting in an RA channel 602*).

Regarding **claim 33**, in addition to features recited in base claim 31 (see rationales discussed above), Pollack further teaches in which the base station decodes each uplink data message and transmits a decode status indicating whether the uplink data message has been successfully decoded (*col. 10, line 7 and thereinafter, Pollack discloses AP 204 uses P&A burst 406 to acknowledge access requests from devices 202 and assigns the usage of INFO bursts 408 during the present air frame 400, inherently corresponding to the claimed limitations*).

Regarding **claim 34**, in addition to features recited in base claim 31 (see rationales discussed above), Pollack further teaches in which unique uplink request signals from the plurality of remote units include simultaneous frequency tone transmissions from the plurality of frequency tones having a random phase relationship to one another (*col. 8, line 65 to col. 9, line 8*).

Regarding **claim 35**, in addition to features recited in base claim 29 (see rationales discussed above), Pollack further teaches in which the unique uplink request signal of each of the plurality of remote units includes the assignment a time slot selected from a plurality of time slots (*col. 2, lines 13-28*).

Regarding **claim 36**, in accordance with Pollack reference entirety, Pollack shows a remote unit (*Fig. 4A and col. 7, lines 2-18 and thereinafter*) for transmitting requests to uplink data message to a base station (*Fig. 2; element 204*) without collisions (*OFDM MAC*), the remote unit (202) comprising:

a receiver (322) having an input to accept solicitations for unique uplink request signals (324); and

a transmitter (322) having an output (antenna) to provide a first frequency tone, selected from a plurality of orthogonal frequency tones, which uniquely identifies the remote unit (*RA burst 404 of Fig. 6 and col. 9, line 47 to col. 10, line 7*),

the transmitter (322) sending the first frequency tone in response to the solicitation of unique uplink request signals, to indicate the existence of a data message for transmission uplink (*RA burst 404 of Fig. 6 and col. 9, line 47 to col. 10, line 7*).

5. Claim 18 is rejected under 35 U.S.C. 102(e) as being anticipated by Dorenbosch et al (USP 6,469,997) (hereinafter "Dorenbosch").

Regarding **claim 18**, in accordance with Dorenbosch reference, Dorenbosch teaches a method for communicating comprising: creating a first time slot to accept signal transmissions; measuring the energy in a first frequency band in which transmissions are received; measuring the energy in a second frequency band in which transmissions are not received; comparing the energy measured in the first and second frequency bands; and in response to the comparison, determining whether a signal has been transmitted (*col. 6, lines 54-64 and thereinafter*).

Allowable Subject Matter

6. Claims 10-11 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record (Pollack) discloses, at col. 10, line 7 and thereinafter, P&A burst 406 uses by access point (AP) 204 to acknowledge access request from data communication devices (DCDs) 202 as well as to assign the usage of INFO burst 408. However, the Pollack reference, considered individually or in combination, fails to further disclose the novel and unobvious limitation of " following the reception of the monitored unique uplink request signals, and preceding the establishment of the data transfer state, organizing a first sequence of remote unit uplink data message transmissions; in which the sending of instructions for the transmission of uplink data messages includes granting permission to transmit uplink data messages in the first sequence; and in which the reception of the uplink data messages includes receiving uplink data messages in the first sequence", structurally and functionally interconnected with other limitations in a manner as recited in the dependent claims 11-12 and 14.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Laroia et al (USP 6,473,418).

Chuang et al (USP 6,052,594).

Roche et al (USP 5,410,538).

Cimini et al, Advanced Cellular Internet Service (ACIS), IEEE, pages 150-159, 1998.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank Duong whose telephone number is (703) 308-5428. The examiner can normally be reached on 7:00AM-3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (703) 308-5463. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Frank Duong
Examiner
Art Unit 2666

July 28, 2004